

Appl. No. «10/731,991»
Amdt dated August 16, 2006

REMARKS/ARGUMENTS

Claims 21-26 were allowed. Allowed claim 23 has been amended to eliminate the word "also".

Claims 2, 6, 7, 12, 16 and 32 were objected to. These claims have been rewritten in independent form, although not all limitations of Claim 1 has been incorporated. For example, the limitation "using a photodetector" is not recited in these claims. Moreover, these claims no longer impose a limitation on the "penetration depth of the coherent electromagnetic radiation". Furthermore, while Claim 6 requires the first region and the second region to be inside a test structure, Claim 2 does not impose this limitation. Also, claim dependencies have been changed in some cases. For example, Claim 19 is amended to depend from Claim 6 and to further define the dimensional relationships between the test structure and the integrated circuit (for support see the specification at page 7, line 7 and page 26, line 27). Accordingly, the Examiner is respectfully requested to carefully review all of the above claims, and again indicate whether or not they are now allowable.

Claims 33 and 35 were indicated as being rejected under 35 USC 112, second paragraph. These two claims have been amended to depend from Claim 32 in accordance with the Examiner's suggestion. Hence, these claims are allowable.

Claim Rejections – 35 U.S.C. §102

Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by Nakazawa's US Patent 4,112,309. In rejecting Claim 1, the Examiner stated:

receiving (8) a semiconductor wafer (5) that comprises a test structure, wherein the test structure comprises a first and second region (7a/7b/7c) that differ from each other by at least one property and wherein the first region comprises an interface in the wafer (5); oscillating a spot of coherent electromagnetic radiation between the first region and the second region; wherein a penetration depth of the coherent electromagnetic radiation is between a depth of the interface and a thickness of the wafer (col. 2, line 50-66); and using a

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Appl. No. «10/731,991»
Amdt dated August 16, 2006

photodetector (22) to measure intensity of a portion of the electromagnetic radiation reflected during said oscillating; and synchronously detecting, at a frequency of said oscillating, an amplitude of an electrical signal generated by the photodetector during measurement by the photodetector (col. 1, line 28-57).

Firstly, "(7a/7b/7c)" cited above are described by Nakazawa as "line edges". Specifically, Nakazawa states that his IC chip pattern which is formed on a semiconductor wafer has falls of the order of several microns in the line edge portions thereof. See column 5, lines 36-41. Claim 1 has been amended to recite a first region that is doped, thereby to distinguish over this citation in Nakazawa's patent. For support, see Applicants' specification, at page 6, line 18.

Secondly, "(5)" cited above is described by Nakazawa as a "semiconductor wafer" at column 3, lines 32-33. Nakazawa also states that in FIG. 6, reference numeral 5 designates a semiconductor substrate subjected to a certain treatment and it is to be understood that a chip pattern 6 is formed on the surface thereof. See column 5, lines 47-50. Claim 1 has been amended to recite an interface between the first region which is doped, and a well underneath this doped region, thereby to distinguish over this citation in Nakazawa's patent. For support, see Applicants' FIG. 2B and the related description in Applicants' specification, at page 16, lines 20-21.

Thirdly, "col. 2, line 50-66" in Nakazawa's patent was cited against Claim 1's penetration depth. This cited text is reproduced below for convenience:

In a preferred embodiment the apparatus comprises a light source emitting coherent light, means for condensing the coherent light into a tiny light spot and illuminating the line with the light spot, means for imparting to the tiny light spot a minute oscillation having an amplitude less than the width of the line, means for moving the tiny light spot and the line relative to each other so that diffracted light may be created at each of the edges of the line, first photoelectric converter means for receiving chiefly the diffracted light created at one of the edges of the line, second photoelectric converter means for receiving chiefly the diffracted light created at the other edge of the line, and a circuit for producing position

Appl. No. «10/731,991»
Amdt dated August 16, 2006

signals corresponding to the edges of the line from the output signals from the first and second photoelectric converter means.

Nothing in the above-quoted text discloses or suggests anything about penetration depth (or absorption length). In contrast, Applicants' specification explicitly describes this claim term as follows (see Applicants' specification at page 14, lines 12-13):

The term "absorption length" is used to indicate a length (also called "penetration depth") at which the Original intensity E_o^2 of beam 219 falls to $(1/e)E_o^2$.

Claim 1 has been further amended to require the electromagnetic radiation to be substantially of a wavelength predetermined to ensure the claimed penetration depth.

In view of one or more of the three reasons discussed above, Applicants respectfully submit that Claim 1 is patentable over Nakazawa's patent. Reconsideration and withdrawal of this rejection is respectfully requested. Claims 3, 4, 9-11, 13-15, and 17-19 depend from Claim 1 and are therefore likewise patentable. New Claim 36 is also believed to be patentable due to its dependence from Claim 1.

Claim Rejections – 35 U.S.C. §103

Claim 27 was rejected under 35 U.S.C. §103(a) as being unpatentable over Nakazawa's patent. As noted above, in the third argument for Claim 1, Nakazawa's patent fails to disclose or suggest anything about absorption length. Moreover, Claim 27 is now amended to require an ion implanter to receive a feedback signal.

Note that the Examiner admits that Nakazawa is silent regarding an ion implanter being located adjacent to the patterning tool. In view of Nakazawa's silence, Applicants respectfully submit that there is no motivation or suggestion to provide the claimed ion implanter that receives a feedback signal. The feedback signal is based on a measurement signal generated by the measurement tool. For support, see the specification at page 36 line 19 to page 37 line 2. Note that Claim 27 does not require a

Appl. No. «10/731,991»
Amdt dated August 16, 2006

factory computer, and is therefore broader than new claim 36 which requires it. If the Examiner continues the rejection of Claim 27 in a future Office Action, the Examiner is respectfully requested to supply a prior art reference for (1) ion implanter with feedback as being claimed and (2) motivation for the specific combination that is being claimed here.

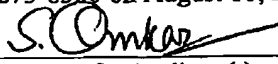
In view of the above reasons, Applicants respectfully submit that Claim 27 is patentable over Nakazawa's patent. Claims 28-31 and 34 depend from Claim 27 and are therefore also believed to be allowable.

Regarding the rejection of Claims 29 and 30, If the Examiner continues these rejections in a future Office Action, the Examiner is respectfully requested to supply a prior art reference in support of the Examiner's position on (3) the claimed acousto-optic type deflector, (4) the claimed galvanometer type mirror and (5) their respective motivations for combination in the precise manner being claimed herein.

For the above reasons, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8203.

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office to the fax number 571-273-8300 on August 16, 2006.


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Aug 16, 2006
Date of Signature

Respectfully submitted,



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